so much to enjoy, that there may be no mistake, I enclose the shell of a wilk (a small specimen of *Littorina littorea*) which I gave it two days ago, and which was today rejected in the empty state it now is.

"It is most interesting to watch the animal's movements; every day it appears in a different form, and developes new beauties. I almost think it is getting *tame*, for it does not now shrink from observation as it did at first, and readily clutches upon its food. When more than one wilk is given to it, it retains, by means of its feelers, those it cannot at once consume,—thus making them wait their turn, which comes so soon as the first taken are rejected. I once saw four or five wilks, of the size of the shell now sent, in its stomach at one time."—George Johnston.

On the Organization and Development of Linguatula (Pentastoma, Rudd.), *accompanied with the description of a new species from the Abdominal Cavity of the Mandrill.* By P. J. Van Beneden.

Among the intestinal worms, the order of the *Acanthotheci* is one of those which most requires further anatomical and physiological investigation*. I am happy to be able to fill up some of the principal gaps in their natural history.

I found in a Mandrill (*Cynocephalus Mormon*), in some cysts formed by the peritoneum, several *Linguatulæ* or *Pentastomæ*, very remarkable from their singular form. This is the first African animal in which *Linguatulæ* have been observed. The species is totally different from all hitherto known, and I have called it *Linguatula Diesingii*, in honour of the celebrated helminthologist of Vienna, M. Diesing.

This species has a white cylindrical annulated body, obtuse at both extremities and as broad in front as behind; there is considerable space between the rings, of which there are only twenty; they suddenly cease posteriorly. The mouth is rounded and situated on the same line as the four hooks; the body is fifteen millimetres in length and two millimetres in breadth.

I found several specimens of the *Linguatula proboscidea* in a Boa; they were fortunately alive, which enabled me to submit all their parts to a microscopic examination, and I have been enabled to decide the following points:—

1. These worms have the sexes separate, contrary to the opinion

* M. Valenciennes, in the beautiful report made to the French Academy of Sciences on M. Blanchard's Memoir on the Organization of Worms, stated,—"It should not be forgotten that the minute and delicate anatomy of these animals can be made only on perfectly fresh individuals. One of the most important genera to examine is *Linguatula*. I will just mention to the Academy, to show how much the meeting with certain intestinal worms is due to chance, that the only specimens of this very rare genus deposited in the rich collection of the Muséum d'Histoire Naturelle, were presented by M. Dumeril, who extracted them from a tumour of the nose of a dog more than thirty years ago; and that notwithstanding the most assiduous researches, no other specimens have again been met with in Paris."—*Comptes Rendus*, June 14, 1847.

of Professor Owen*: what may have led him into error is, that the female is provided with a double copulative sac which I found to be filled with spermatozoa. M. Valentin had previously detected this male product in the organ supposed by M. Diesing to be the gland which secretes the envelopes for the ova.

The male is provided with a double penis, which exceeds the body in length and corresponds to the long oviduct.

2. The *Pentastomæ* or *Linguatulæ* are not Entozoa, but belong to the division of articulated animals; they come nearest to the *Lerneæ*.

This opinion is based upon the following considerations:—

a. These animals on their extrication from the egg are provided with two pairs of articulated feet terminated by hooks.

b. The nervous system differs from that of the *Lerneæ* only in having the two chords which form the ganglionic chain separated throughout their length, whilst in the *Lerneæ* they are only separated for half their length.

c. In both cases the males are comparatively very small. The ovisacs in the females are equally bulky; but in the *Lerneæ*, which live in water, they project externally; whilst in the *Linguatulæ*, which always live in a different medium, they remain in the interior.

d. Besides the ring of nerves, the subœsophageal ganglion, and the chords which represent the ganglionic chain, the *Linguatulæ* are provided with different ganglions representing the great sympathic. I detected four perfectly distinct ganglions spread over the sides of the lower surface of the œsophagus in the new species from the Mandrill. In another species M. Blanchard detected these ganglions and stomato-gastric nerves; but he referred them to the system of the nerves of relation or those of animal life, judging, at least, from the name which he has assigned to them.

e. Another point, which however had not escaped the attention of naturalists, is, that the muscles exhibit in their primitive fibres the transverse lines which are not met with in the lower animals.—*Bullet. de l'Acad. Royale de Belgique.*

On certain Principles bearing upon the Natural Classification of Animals, and more particularly on the Methodical Distribution of the Mammifera. By M. Milne-Edwards.

Milne-Edwards, in this learned memoir, in which he gives in a connected form the views elsewhere presented by him in detached

* Professor Owen has rectified his original description, founded on the dissection of a single female specimen, in which the sacs appended to the oviduct were full of spermatozoa and supposed therefore to be the 'testes,' in his "Lectures on the Comparative Anatomy of the Invertebrate Animals," in which he describes the male *Linguatula* (p. 71), distinct from the female (p. 72), and after remarking that "most of the *Pentastomata* of Rudolphi appertain to the Cœlelminthic class," the Professor expressly states: "the *Acanthocephala* constitute a more limited, yet natural order; and the *Linguatulæ* (*Pentastomata* of Rudolphi) are the type of an analogous circumscribed group with a higher type of organization, which entitles them to rank in the class *Cœlelmintha*;" (Ib. p. 62.) one of the characters of the entozoa of this class being that they are of separate sexes.—Ed.